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Items 1 - 19 of 19 One page.

1: Guo M, Roman RJ, Fenstermacher JD, Brown SL, Falck JR, Arbab AS, Edwards PA, Scicli AG. Related Articles, Links

9L Gliosarcoma Cell Proliferation and Tumor Growth in Rats Are Suppressed by N-Hydroxy-N'-(4-butyl-2-methylphenol) Formamidine (HET0016), a Selective Inhibitor of CYP4A.
J Pharmacol Exp Ther. 2006 Apr;317(1):97-108. Epub 2005 Dec 13.
PMID: 16352703 [PubMed - in process]

2: Seki T, Wang MH, Miyata N, Laniado-Schwartzman M. Related Articles, Links

Cytochrome P450 4A isoform inhibitory profile of N-hydroxy-N'-(4-butyl-2-methylphenyl)-formamidine (HET0016), a selective inhibitor of 20-HETE synthesis.
Biol Pharm Bull. 2005 Sep;28(9):1651-4.
PMID: 16141533 [PubMed - indexed for MEDLINE]

3: Guo M, Roman RJ, Falck JR, Edwards PA, Scicli AG. Related Articles, Links

Human U251 glioma cell proliferation is suppressed by HET0016 [N-hydroxy-N'-(4-butyl-2-methylphenyl)formamidine], a selective inhibitor of CYP4A.
J Pharmacol Exp Ther. 2005 Nov;315(2):526-33. Epub 2005 Aug 4.
PMID: 16081682 [PubMed - indexed for MEDLINE]

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Life Sci. 2005 Jul 15;77(9):1015-29.
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Am J Pathol. 2005 Feb;166(2):615-24.
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10: Nakamura T, Sato M, Kakinuma H, Miyata N, Taniguchi K, Bando K, Koda A, Kameo K. Related Articles, Links

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J Med Chem. 2003 Dec 4;46(25):5416-27.
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PMID: 12874093 [PubMed - indexed for MEDLINE]

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Am J Physiol Heart Circ Physiol. 2003 May;284(5):H1528-35. Epub 2003 Jan 9.
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Discovery of a N'-hydroxyphenylformamidine derivative HET0016 as a potent and selective 20-HETE synthase inhibitor.
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PMID: 11502591 [PubMed - indexed for MEDLINE]

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Br J Pharmacol. 2001 Jun;133(3):325-9.
PMID: 11375247 [PubMed - indexed for MEDLINE]

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L4 ANSWER 1 OF 2 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2003:258659 BIOSIS
DN PREV200300258659
TI CYP4A isoform inhibitory profile of HET0016, a selective inhibitor of
20-HETE synthesis.
AU Seki, Takayuki [Reprint Author]; Wang, Mong-Heng; Miyata, Noriyuki;
Laniado-Schwartzman, Michal
CS Medicinal Research Laboratories, TAISHO PHARMACEUTICAL CO., LTD., 1-403
Yoshino-cho, Saitama City, Saitama, 330-8530, Japan
takayuki.seki@po.rd.taisho.co.jp; mong-heng_wang@nymc.edu;
noriyuki.miyata@po.rd.taisho.co.jp; michal_schwartzman@nymc.edu
SO FASEB Journal, (March 2003) Vol. 17, No. 4-5, pp. Abstract No. 90.8.
http://www.fasebj.org/. e-file.
Meeting Info.: FASEB Meeting on Experimental Biology: Translating the
Genome. San Diego, CA, USA. April 11-15, 2003. FASEB.
ISSN: 0892-6638 (ISSN print).
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 4 Jun 2003
Last Updated on STN: 4 Jun 2003
AB 20-hydroxy-5,8,11,14-eicosatetraenoic acid (20-HETE) is a potent
vasoconstrictor eicosanoid in the renal and cerebral microcirculation. We
have previously reported that HET0016 (N-hydroxy-N'-(4-butyl-2-
methylphenyl)-formamidine) is a potent and selective inhibitor of 20-HETE
synthesis in rat and human renal microsomes (Br. J. Pharmacol.135:325,
2001). In the present study, we examined the effect of HET0016 on 20-HETE
synthesis catalyzed by recombinant CYP4A1, 4A2, and 4A3 and characterized
the enzyme inhibitory profile of HET0016. **HET0016** inhibited
arachidonic acid (AA) conversion to 20-**HETE** by

all three CYP4A isoforms in a concentration-dependent manner. The IC50 values of HET0016 for recombinant CYP4A1, 4A2, and 4A3-catalyzed 20-HETE syntheses averaged 17.7 nM, 12.1 nM, and 20.6 nM, respectively. Formation of 20-HETE from AA by recombinant CYP4A1 exhibited simple Michaelis-Menten kinetics. The Ki value of HET0016 for CYP4A1 was 18.6 nM. Furthermore the plot of maximal initial velocity (Vmax) versus the amount of enzyme added showed that HET0016 is an irreversible inhibitor. These results indicate that HET0016 is a non-competitive and irreversible inhibitor of CYP4A family and thereby may be used to specifically target the 20-HETE synthesis in vitro and in vivo.

L4 ANSWER 2 OF 2 MEDLINE on STN DUPLICATE 1
AN 2001668726 MEDLINE
DN PubMed ID: 11714595
TI Discovery of a N'-hydroxyphenylformamidine derivative HET0016 as a potent and selective 20-HETE synthase inhibitor.
AU Sato M; Ishii T; Kobayashi-Matsunaga Y; Amada H; Taniguchi K; Miyata N; Kameo K
CS Medicinal Research Laboratories, Taisho Pharmaceutical Co., Ltd., 1-403 Yoshino-cho, Saitama, Saitama 330-8530, Japan.
SO Bioorganic & medicinal chemistry letters, (2001 Dec 3) Vol. 11, No. 23, pp. 2993-5.
Journal code: 9107377. ISSN: 0960-894X.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200203
ED Entered STN: 20011121
Last Updated on STN: 20020307
Entered Medline: 20020305
AB N-(4-Butyl-2-methylphenyl)-N'-hydroxyformamidine (HET0016) was evaluated as the first potent and selective inhibitor of 20-hydroxy-5,8,11,14-eicosatetraenoic acid (20-HETE) synthase. The IC(50) value of **HET0016** for the production of 20-**HETE** from **arachidonic acid** (AA) by human renal microsomes was 8.9+/-2.7 nM, with over 200 times the selectivity of xenobiotic-

metabolizing cytochrome P450 enzymes. An examination of the structure-activity relationship revealed that the unsubstituted hydroxyformamidine moiety and the substituent at the para-position of the N-hydroxyformamidine moiety are necessary for the potent activity of HET0016.

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L6 ANSWER 1 OF 5 MEDLINE on STN
AN 2006163135 IN-PROCESS
DN PubMed ID: 16352703
TI 9L Gliosarcoma Cell Proliferation and Tumor Growth in Rats Are Suppressed by N-Hydroxy-N'-(4-butyl-2-methylphenol) Formamidine (**HET0016**), a Selective Inhibitor of CYP4A.
AU Guo Meng; Roman Richard J; Fenstermacher Joseph D; Brown Stephen L; Falck John R; Arbab Ali S; Edwards Paul A; Scicli A Guillermo
CS Eye Care Services, Henry Ford Hospital, One Ford Place, 4 D, Detroit, MI 48202-3450.. mguo1@hfhs.org
SO The Journal of pharmacology and experimental therapeutics, (2006 Apr) Vol. 317, No. 1, pp. 97-108. Electronic Publication: 2005-12-13. Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority Journals
ED Entered STN: 20060323
Last Updated on STN: 20060323

AB The present study examined the effects of N-hydroxy-N'-(4-butyl-2 methylphenyl) formamidine (**HET0016**), a selective inhibitor of the formation of 20-hydroxyeicosatrienoic acid (20-HETE) on the growth of 9L rat gliosarcoma cells in vitro and in vivo. After 48 h of incubation, **HET0016** reduced the proliferation of 9L in vitro by 55%, and this was associated with a fall in p42/p44 mitogen-activated protein kinase and stress-activated protein kinase/c-Jun NH(2)-terminal kinase phosphorylation and increased apoptosis. **HET0016** inhibited epidermal growth factor (EGF) and platelet-derived growth factor (PDGF)-induced proliferation and diminished phosphorylation of PDGF receptors. A stable 20-HETE analog increased 9L cell proliferation. In vivo, chronic administration of **HET0016** (10 mg/kg/day i.p.) for 2 weeks reduced the volume of 9L tumors by 80%. This was accompanied by a 4-fold reduction in the mitotic index, a 3- to 4-fold increase in the apoptotic index, and a approximately 50% decrease in vascularization in the tumor. **HET0016** treatment increased mean survival time of the animals from 17 to 22 days. Liquid chromatography/mass spectrometry experiments indicated that neither 9L cells grown in vitro nor 9L tumors removed produce 20-**HETE** when incubated with **arachidonic acid**. The normal surrounding brain tissue, however, avidly makes 20-HETE, and this activity is selectively inhibited by **HET0016**. These results suggest that **HET0016** may be the prototype of a class of antigrowth compounds that may be efficacious for treating malignant brain tumors. In vivo, it may act in part by inhibiting the formation of 20-HETE by the surrounding tissue. However, the antiproliferative effects of **HET0016** on 9L cells in vitro seem unrelated to its ability to inhibit the formation of 20-HETE.

L6 ANSWER 2 OF 5 MEDLINE on STN DUPLICATE 1
AN 2005560419 MEDLINE
DN PubMed ID: 16081682
TI Human U251 glioma cell proliferation is suppressed by **HET0016** [N-hydroxy-N'-(4-butyl-2-methylphenyl)formamidine], a selective inhibitor of CYP4A.
AU Guo Meng; Roman Richard J; Falck John R; Edwards Paul A; Scicli A Guillermo
CS Eye Care Services, Henry Ford Hospital, Detroit, MI 48202-3450, USA..
mguo1@hfhs.org

NC EY014385 (NEI)
GM31278 (NIGMS)
HL 036279 (NHLBI)
SO The Journal of pharmacology and experimental therapeutics, (2005 Nov) Vol. 315, No. 2, pp. 526-33. Electronic Publication: 2005-08-04.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200601
ED Entered STN: 20051021
Last Updated on STN: 20060113
Entered Medline: 20060112
AB We have previously reported that **HET0016** [N-hydroxy-N'-(4-butyl-2 methylphenyl)formamidine], a selective inhibitor of CYP4A and thus 20-HETE (20-hydroxyeicosatetraenoic acid) synthesis, inhibits endothelial cell proliferation and decreases angiogenesis induced by human glioma cell U251. A stable 20-HETE agonist, WIT003 [20-hydroxyeicosa-5(Z),14(Z)-dienoic acid (1 microM)], increased U251 cell proliferation from 3.9- to 4.8-folds from T(0) (time of the treatment). We examined the effects of **HET0016** on the growth of U251. **HET0016** inhibited U251 basal cell proliferation in a dose-dependent manner. 10 microM **HET0016** suppressed 56% of U251 proliferation and significantly increased the proportions of the cells arrested in the G(0)/G(1) phase of the cell cycle. Exposure to **HET0016** (as early as 4 h) reduced protein tyrosine and p42/p44 MAPK (mitogen-activated protein kinase) phosphorylation. Furthermore, **HET0016** significantly inhibited the U251 proliferation and phosphorylation of both the epidermal growth factor (EGF) receptor and p42/p44 MAPK induced by EGF. CYP4A mRNA and proteins were both present in U251. This suggests that **HET0016** inhibited U251 proliferation by inhibiting 20-HETE synthesis. However, U251 did not synthesize 20-**HETE** in the presence of **arachidonic acid**. This implies that **HET0016** suppresses U251 proliferation by mechanisms that are not yet clear but may involve activities other than inhibition of 20-HETE synthesis. We concluded that **HET0016** may be the prototype of novel compounds that suppress human glioma cell proliferation.

L6 ANSWER 3 OF 5 MEDLINE on STN DUPLICATE 2
AN 2003463360 MEDLINE
DN PubMed ID: 12874093
TI Inhibitors of 20-HETE formation promote salt-sensitive hypertension in rats.
AU Hoagland Kimberly M; Flasch Averia K; Roman Richard J
CS Department of Physiology, Medical College of Wisconsin, Milwaukee, WI 53226, USA.
NC HL-10364-03 (NHLBI)
HL-29574 (NHLBI)
HL-36279 (NHLBI)
SO Hypertension, (2003 Oct) Vol. 42, No. 4, pp. 669-73. Electronic Publication: 2003-07-21.
Journal code: 7906255. E-ISSN: 1524-4563.
CY United States
DT (LECTURES)
LA English
FS Priority Journals
EM 200311
ED Entered STN: 20031004
Last Updated on STN: 20031111
Entered Medline: 20031110
AB This study examined whether chronic blockade of epoxyeicosatrienoic acids (EETs) and/or 20-hydroxyeicosatetraenoic acid (20-HETE) formation promotes development of salt-sensitive hypertension. Changes in blood pressure, renal cytochrome P450 metabolism of **arachidonic acid**, and 20-**HETE** excretion in response to a high salt diet were measured in rats chronically treated with 1-aminobenzotriazole (ABT, 50 mg/kg per day) to block EETs and 20-HETE formation or N-hydroxy-N'-(4-butyl-2 methylphenyl) formamidine (**HET0016**, 10 mg/kg per day) that selectively reduces 20-HETE formation. ABT reduced blood pressure in rats fed a low salt (0.4% NaCl) diet, but blood pressure rose by 20 mm Hg after these rats were switched to a high salt (8% NaCl) diet for 10 days. **HET0016** had no effect on blood pressure in rats fed a low salt diet; however, blood pressure rose by 18 mm Hg after the rats were fed a high salt diet. 20-HETE formation in kidney homogenates rose by 30% and epoxygenase activity doubled when rats were fed a high salt diet. Chronic treatment with ABT and **HET0016** inhibited the renal formation of

20-HETE by approximately 90%. Renal epoxygenase activity decreased by 76%
in ABT-treated rats and was not significantly altered in rats treated with
HET0016. 20-HETE excretion rose from 470+/-21 to 570+/-41 ng/d
when the rats were switched from the low to the high salt diet. 20-HETE
excretion fell by 68% and 85% in rats that were chronically treated with
ABT and **HET0016**. These results suggest that chronic blockade of
the formation of 20-HETE promotes the development of salt-sensitive
hypertension in rats.

L6 ANSWER 4 OF 5 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2003:258659 BIOSIS
DN PREV200300258659
TI CYP4A isoform inhibitory profile of **HET0016**, a selective
inhibitor of 20-HETE synthesis.
AU Seki, Takayuki [Reprint Author]; Wang, Mong-Heng; Miyata, Noriyuki;
Laniado-Schwartzman, Michal
CS Medicinal Research Laboratories, TAISHO PHARMACEUTICAL CO., LTD., 1-403
Yoshino-cho, Saitama City, Saitama, 330-8530, Japan
takayuki.seki@po.rd.taisho.co.jp; mong-heng_wang@nymc.edu;
noriyuki.miyata@po.rd.taisho.co.jp; michal_schwartzman@nymc.edu
SO FASEB Journal, (March 2003) Vol. 17, No. 4-5, pp. Abstract No. 90.8.
http://www.fasebj.org/. e-file.
Meeting Info.: FASEB Meeting on Experimental Biology: Translating the
Genome. San Diego, CA, USA. April 11-15, 2003. FASEB.
ISSN: 0892-6638 (ISSN print).
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 4 Jun 2003
Last Updated on STN: 4 Jun 2003
AB 20-hydroxy-5,8,11,14-eicosatetraenoic acid (20-HETE) is a potent
vasoconstrictor eicosanoid in the renal and cerebral microcirculation. We
have previously reported that **HET0016** (N-hydroxy-N'-(4-butyl-2-
methylphenyl)-formamidine) is a potent and selective inhibitor of 20-HETE
synthesis in rat and human renal microsomes (Br. J. Pharmacol.135:325,
2001). In the present study, we examined the effect of **HET0016**
on 20-HETE synthesis catalyzed by recombinant CYP4A1, 4A2, and 4A3 and
characterized the enzyme inhibitory profile of **HET0016**.

HET0016 inhibited **arachidonic acid** (AA) conversion to 20-**HETE** by all three CYP4A isoforms in a concentration-dependent manner. The IC50 values of **HET0016** for recombinant CYP4A1, 4A2, and 4A3-catalyzed 20-HETE syntheses averaged 17.7 nM, 12.1 nM, and 20.6 nM, respectively. Formation of 20-HETE from AA by recombinant CYP4A1 exhibited simple Michaelis-Menten kinetics. The Ki value of **HET0016** for CYP4A1 was 18.6 nM. Furthermore the plot of maximal initial velocity (Vmax) versus the amount of enzyme added showed that **HET0016** is an irreversible inhibitor. These results indicate that **HET0016** is a non-competitive and irreversible inhibitor of CYP4A family and thereby may be used to specifically target the 20-HETE synthesis in vitro and in vivo.

L6 ANSWER 5 OF 5 MEDLINE on STN DUPLICATE 3
AN 2001668726 MEDLINE
DN PubMed ID: 11714595
TI Discovery of a N'-hydroxyphenylformamidine derivative **HET0016** as a potent and selective 20-HETE synthase inhibitor.
AU Sato M; Ishii T; Kobayashi-Matsunaga Y; Amada H; Taniguchi K; Miyata N; Kameo K
CS Medicinal Research Laboratories, Taisho Pharmaceutical Co., Ltd., 1-403 Yoshino-cho, Saitama, Saitama 330-8530, Japan.
SO Bioorganic & medicinal chemistry letters, (2001 Dec 3) Vol. 11, No. 23, pp. 2993-5.
Journal code: 9107377. ISSN: 0960-894X.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200203
ED Entered STN: 20011121
Last Updated on STN: 20020307
Entered Medline: 20020305
AB N-(4-Butyl-2-methylphenyl)-N'-hydroxyformamidine (**HET0016**) was evaluated as the first potent and selective inhibitor of 20-hydroxy-5,8,11,14-eicosatetraenoic acid (20-HETE) synthase. The IC(50) value of **HET0016** for the production of 20-**HETE** from **arachidonic acid** (AA) by human renal microsomes was 8.9+/-2.7 nM, with over 200 times the selectivity of xenobiotic-metabolizing cytochrome P450 enzymes. An examination of the structure-activity relationship revealed that the unsubstituted hydroxyformamidine moiety and the substituent at the para-position of the

N-hydroxyformamidine moiety are necessary for the potent activity of **HET0016**.

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=> s Formamidine
L7         4165 FORMAMIDINE

=> s l7 (8A) l2
L8            0 L7 (8A) L2

=> s l7 and l2
L9           13 L7 AND L2

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L10  ANSWER 1 OF 6     MEDLINE on STN
AN   2006163135      IN-PROCESS
DN   PubMed ID: 16352703
TI   9L Gliosarcoma Cell Proliferation and Tumor Growth in Rats Are
Suppressed
     by N-Hydroxy-N'-(4-butyl-2-methylphenol) Formamidine (HET0016),
     a Selective Inhibitor of CYP4A.
AU   Guo Meng; Roman Richard J; Fenstermacher Joseph D; Brown Stephen
L; Falck
     John R; Arbab Ali S; Edwards Paul A; Scicli A Guillermo
CS   Eye Care Services, Henry Ford Hospital, One Ford Place, 4 D,
Detroit, MI
     48202-3450.. mguo1@hfhs.org
SO   The Journal of pharmacology and experimental therapeutics, (2006
Apr) Vol.
     317, No. 1, pp. 97-108.  Electronic Publication: 2005-12-13.
     Journal code: 0376362. ISSN: 0022-3565.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   NONMEDLINE; IN-DATA-REVIEW; IN-PROCESS; NONINDEXED; Priority
Journals
ED   Entered STN: 20060323
     Last Updated on STN: 20060323
AB   The present study examined the effects of N-hydroxy-N'-(4-butyl-2
     methylphenyl) formamidine (HET0016), a selective inhibitor of
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the formation of 20-hydroxyeicosatrienoic acid (20-HETE) on the growth of 9L rat gliosarcoma cells in vitro and in vivo. After 48 h of incubation, HET0016 reduced the proliferation of 9L in vitro by 55%, and this was associated with a fall in p42/p44 mitogen-activated protein kinase and stress-activated protein kinase/c-Jun NH(2)-terminal kinase phosphorylation and increased apoptosis. HET0016 inhibited epidermal growth factor (EGF) and platelet-derived growth factor (PDGF)-induced proliferation and diminished phosphorylation of PDGF receptors. A stable 20-HETE analog increased 9L cell proliferation. In vivo, chronic administration of HET0016 (10 mg/kg/day i.p.) for 2 weeks reduced the volume of 9L tumors by 80%. This was accompanied by a 4-fold reduction in the mitotic index, a 3- to 4-fold increase in the apoptotic index, and a approximately 50% decrease in vascularization in the tumor. HET0016 treatment increased mean survival time of the animals from 17 to 22 days. Liquid chromatography/mass spectrometry experiments indicated that neither 9L cells grown in vitro nor 9L tumors removed produce 20-**HETE** when incubated with **arachidonic acid**. The normal surrounding brain tissue, however, avidly makes 20-HETE, and this activity is selectively inhibited by HET0016. These results suggest that HET0016 may be the prototype of a class of antigrowth compounds that may be efficacious for treating malignant brain tumors. In vivo, it may act in part by inhibiting the formation of 20-HETE by the surrounding tissue. However, the antiproliferative effects of HET0016 on 9L cells in vitro seem unrelated to its ability to inhibit the formation of 20-HETE.

L10 ANSWER 2 OF 6 MEDLINE on STN DUPLICATE 1
AN 2005560419 MEDLINE
DN PubMed ID: 16081682
TI Human U251 glioma cell proliferation is suppressed by HET0016 [N-hydroxy-N'-(4-butyl-2-methylphenyl)**formamidine**], a selective inhibitor of CYP4A.
AU Guo Meng; Roman Richard J; Falck John R; Edwards Paul A; Scicli A

Guillermo
CS Eye Care Services, Henry Ford Hospital, Detroit, MI 48202-3450, USA..
mguo1@hfhs.org
NC EY014385 (NEI)
GM31278 (NIGMS)
HL 036279 (NHLBI)
SO The Journal of pharmacology and experimental therapeutics, (2005 Nov) Vol.
315, No. 2, pp. 526-33. Electronic Publication: 2005-08-04.
Journal code: 0376362. ISSN: 0022-3565.
CY United States
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200601
ED Entered STN: 20051021
Last Updated on STN: 20060113
Entered Medline: 20060112
AB We have previously reported that HET0016 [N-hydroxy-N'-(4-butyl-2 methylphenyl)**formamidine**], a selective inhibitor of CYP4A and thus 20-HETE (20-hydroxyeicosatetraenoic acid) synthesis, inhibits endothelial cell proliferation and decreases angiogenesis induced by human glioma cell U251. A stable 20-HETE agonist, WIT003 [20-hydroxyeicosa-5(Z),14(Z)-dienoic acid (1 microM)], increased U251 cell proliferation from 3.9- to 4.8-folds from T(0) (time of the treatment). We examined the effects of HET0016 on the growth of U251. HET0016 inhibited U251 basal cell proliferation in a dose-dependent manner. 10 microM HET0016 suppressed 56% of U251 proliferation and significantly increased the proportions of the cells arrested in the G(0)/G(1) phase of the cell cycle. Exposure to HET0016 (as early as 4 h) reduced protein tyrosine and p42/p44 MAPK (mitogen-activated protein kinase) phosphorylation. Furthermore, HET0016 significantly inhibited the U251 proliferation and phosphorylation of both the epidermal growth factor (EGF) receptor and p42/p44 MAPK induced by EGF. CYP4A mRNA and proteins were both present in U251. This suggests that HET0016 inhibited U251 proliferation by inhibiting 20-HETE synthesis. However, U251 did not synthesize 20-**HETE** in the presence of **arachidonic acid**. This implies that HET0016 suppresses U251 proliferation by mechanisms that

are not yet clear but may involve activities other than inhibition of 20-HETE synthesis. We concluded that HET0016 may be the prototype of novel compounds that suppress human glioma cell proliferation.

L10 ANSWER 3 OF 6 EMBASE
AN 2005507378 EMBASE
TI Role of 20-hydroxyeicosatetraenoic acid (20-HETE) in vascular system.
AU Miyata N.; Roman R.J.
CS Dr. N. Miyata, Medicinal Pharmacology Laboratory, Medicinal Research Laboratories, Taisho Pharmaceutical Co., Ltd., 1-403 Yoshino-cho, Saitama-city, Saitama 331-9530, Japan.
noriyuki.miyata@po.rd.taisho.co.jp
SO Journal of Smooth Muscle Research, (2005) Vol. 41, No. 4, pp. 175-193. .
Refs: 116
ISSN: 0916-8737 CODEN: JSMRE2
CY Japan
DT Journal; General Review
FS 018 Cardiovascular Diseases and Cardiovascular Surgery
030 Pharmacology
037 Drug Literature Index
LA English
SL English
ED Entered STN: 20051208
Last Updated on STN: 20051208
AB Cytochrome P450s (P450) metabolize **arachidonic acid** (AA) to hydroxyeicosatetraenoic acids (**HETEs**) and epoxyeicosatrienoic acids (EETs). Among these eicosanoids, 20-HETE is formed in a tissue and cell-specific fashion and plays an important role in the regulation of vascular tone in the brain, kidney, heart and splanchnic beds. 20-HETE is a potent vasoconstrictor produced in vascular smooth muscle (VSM) cells. It depolarizes VSM by blocking the open-state probability of Ca(2+)- activated K(+)-channels. Inhibitors of the formation of 20-HETE block the myogenic response of renal and cerebral arterioles in vitro and autoregulation of renal and cerebral blood flow in vivo. The formation of 20-HETE in vascular smooth muscle is stimulated by angiotensin II, endothelin and norepinephrine and is inhibited by nitric

oxide (NO). 20-HETE also stimulates mitogenic and angiogenic responses in vitro and in vivo. Changes in the production of 20-HETE have been observed in ischemic cerebrovascular diseases, cardiac ischemia-reperfusion injury, kidney diseases, hypertension, diabetes, uremia, toxemia of pregnancy. The physiological and pathophysiological role of 20-HETE in the regulation of vascular tone are being revealed by the use of newly developed inhibitors of the synthesis of 20-HETE and 20-HETE analogs. The present review summarizes recent findings implicating a critical role for 20-HETE in altering cardiovascular function in a variety of pathological conditions.

L10 ANSWER 4 OF 6 MEDLINE on STN DUPLICATE 2
AN 2003463360 MEDLINE
DN PubMed ID: 12874093
TI Inhibitors of 20-HETE formation promote salt-sensitive hypertension in rats.
AU Hoagland Kimberly M; Flasch Averia K; Roman Richard J
CS Department of Physiology, Medical College of Wisconsin, Milwaukee, WI 53226, USA.
NC HL-10364-03 (NHLBI)
HL-29574 (NHLBI)
HL-36279 (NHLBI)
SO Hypertension, (2003 Oct) Vol. 42, No. 4, pp. 669-73. Electronic Publication: 2003-07-21.
Journal code: 7906255. E-ISSN: 1524-4563.
CY United States
DT (LECTURES)
LA English
FS Priority Journals
EM 200311
ED Entered STN: 20031004
Last Updated on STN: 20031111
Entered Medline: 20031110
AB This study examined whether chronic blockade of epoxyeicosatrienoic acids (EETs) and/or 20-hydroxyeicosatetraenoic acid (20-HETE) formation promotes development of salt-sensitive hypertension. Changes in blood pressure, renal cytochrome P450 metabolism of **arachidonic acid**, and 20-**HETE** excretion in response to a high salt diet were measured in rats chronically treated with 1-aminobenzotriazole (ABT, 50

mg/kg per day) to block EETs and 20-HETE formation or N-hydroxy-N'-(4-butyl-2 methylphenyl) **formamidine** (HET0016, 10 mg/kg per day) that selectively reduces 20-HETE formation. ABT reduced blood pressure in rats fed a low salt (0.4% NaCl) diet, but blood pressure rose by 20 mm Hg after these rats were switched to a high salt (8% NaCl) diet for 10 days. HET0016 had no effect on blood pressure in rats fed a low salt diet; however, blood pressure rose by 18 mm Hg after the rats were fed a high salt diet. 20-HETE formation in kidney homogenates rose by 30% and epoxygenase activity doubled when rats were fed a high salt diet. Chronic treatment with ABT and HET0016 inhibited the renal formation of 20-HETE by approximately 90%. Renal epoxygenase activity decreased by 76% in ABT-treated rats and was not significantly altered in rats treated with HET0016. 20-HETE excretion rose from 470+/-21 to 570+/-41 ng/d when the rats were switched from the low to the high salt diet. 20-HETE excretion fell by 68% and 85% in rats that were chronically treated with ABT and HET0016. These results suggest that chronic blockade of the formation of 20-HETE promotes the development of salt-sensitive hypertension in rats.

L10 ANSWER 5 OF 6 BIOSIS COPYRIGHT (c) 2006 The Thomson Corporation on STN
AN 2003:258659 BIOSIS
DN PREV200300258659
TI CYP4A isoform inhibitory profile of HET0016, a selective inhibitor of 20-HETE synthesis.
AU Seki, Takayuki [Reprint Author]; Wang, Mong-Heng; Miyata, Noriyuki; Laniado-Schwartzman, Michal
CS Medicinal Research Laboratories, TAISHO PHARMACEUTICAL CO., LTD., 1-403 Yoshino-cho, Saitama City, Saitama, 330-8530, Japan takayuki.seki@po.rd.taisho.co.jp; mong-heng_wang@nymc.edu; noriyuki.miyata@po.rd.taisho.co.jp; michal_schwartzman@nymc.edu
SO FASEB Journal, (March 2003) Vol. 17, No. 4-5, pp. Abstract No. 90.8. http://www.fasebj.org/. e-file.

Meeting Info.: FASEB Meeting on Experimental Biology: Translating the Genome. San Diego, CA, USA. April 11-15, 2003. FASEB.
ISSN: 0892-6638 (ISSN print).
DT Conference; (Meeting)
Conference; Abstract; (Meeting Abstract)
LA English
ED Entered STN: 4 Jun 2003
Last Updated on STN: 4 Jun 2003
AB 20-hydroxy-5,8,11,14-eicosatetraenoic acid (20-HETE) is a potent vasoconstrictor eicosanoid in the renal and cerebral microcirculation. We have previously reported that HET0016 (N-hydroxy-N'-(4-butyl-2-methylphenyl)-**formamidine**) is a potent and selective inhibitor of 20-HETE synthesis in rat and human renal microsomes (Br. J. Pharmacol.135:325, 2001). In the present study, we examined the effect of HET0016 on 20-HETE synthesis catalyzed by recombinant CYP4A1, 4A2, and 4A3 and characterized the enzyme inhibitory profile of HET0016. HET0016 inhibited **arachidonic acid** (AA) conversion to 20-**HETE** by all three CYP4A isoforms in a concentration-dependent manner. The IC50 values of HET0016 for recombinant CYP4A1, 4A2, and 4A3-catalyzed 20-HETE syntheses averaged 17.7 nM, 12.1 nM, and 20.6 nM, respectively. Formation of 20-HETE from AA by recombinant CYP4A1 exhibited simple Michaelis-Menten kinetics. The Ki value of HET0016 for CYP4A1 was 18.6 nM. Furthermore the plot of maximal initial velocity (Vmax) versus the amount of enzyme added showed that HET0016 is an irreversible inhibitor. These results indicate that HET0016 is a non-competitive and irreversible inhibitor of CYP4A family and thereby may be used to specifically target the 20-HETE synthesis in vitro and in vivo.

L10 ANSWER 6 OF 6 MEDLINE on STN DUPLICATE 3
AN 2001668726 MEDLINE
DN PubMed ID: 11714595
TI Discovery of a N'-hydroxyphenylformamidine derivative HET0016 as a potent and selective 20-HETE synthase inhibitor.
AU Sato M; Ishii T; Kobayashi-Matsunaga Y; Amada H; Taniguchi K; Miyata N; Kameo K
CS Medicinal Research Laboratories, Taisho Pharmaceutical Co., Ltd., 1-403 Yoshino-cho, Saitama, Saitama 330-8530, Japan.

SO Bioorganic & medicinal chemistry letters, (2001 Dec 3) Vol. 11, No. 23,
pp. 2993-5.
Journal code: 9107377. ISSN: 0960-894X.
CY England: United Kingdom
DT Journal; Article; (JOURNAL ARTICLE)
LA English
FS Priority Journals
EM 200203
ED Entered STN: 20011121
Last Updated on STN: 20020307
Entered Medline: 20020305
AB N-(4-Butyl-2-methylphenyl)-N'-hydroxyformamidine (HET0016) was evaluated
as the first potent and selective inhibitor of 20-hydroxy-5,8,11,14-
eicosatetraenoic acid (20-HETE) synthase. The IC(50) value of HET0016 for
the production of 20-**HETE** from **arachidonic acid** (AA) by human renal microsomes was 8.9+/-2.7 nM, with over
200 times the selectivity of xenobiotic-metabolizing cytochrome P450
enzymes. An examination of the structure-activity relationship revealed
that the unsubstituted hydroxyformamidine moiety and the substituent at
the para-position of the N-hydroxyformamidine moiety are necessary for the
potent activity of HET0016.

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Items 1 - 10 of 10 One page.

1: Guo M, Roman RJ, Fenstermacher JD, Brown SL, Falck JR, Arbab AS, Edwards PA, Scicli AG. Related Articles, Links

9L Gliosarcoma Cell Proliferation and Tumor Growth in Rats Are Suppressed by N-Hydroxy-N'-(4-butyl-2-methylphenol) Formamidine (HET0016), a Selective Inhibitor of CYP4A.
J Pharmacol Exp Ther. 2006 Apr;317(1):97-108. Epub 2005 Dec 13.
PMID: 16352703 [PubMed - in process]

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4: Guo M, Roman RJ, Falck JR, Edwards PA, Scicli AG. Related Articles, Links

Human U251 glioma cell proliferation is suppressed by HET0016 [N-hydroxy-N'-(4-butyl-2-methylphenyl)formamidine], a selective inhibitor of CYP4A.
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Am J Pathol. 2005 Feb;166(2):615-24.
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PMID: 11714595 [PubMed - indexed for MEDLINE]

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HET0016, a potent and selective inhibitor of 20-HETE synthesizing enzyme.
Br J Pharmacol. 2001 Jun;133(3):325-9.
PMID: 11375247 [PubMed - indexed for MEDLINE]

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Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	1949	Formamidine	USPAT	OR	OFF	2006/03/27 20:07
L2	0	Formamidine near4 hete	USPAT	OR	OFF	2006/03/27 20:08
L3	0	Formamidine near4 (arachidonic adj acid)	USPAT	OR	OFF	2006/03/27 20:08

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All: 1 Review: 0

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Mar 22 2006 06:32:05

EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
L1	0	wo-9943310-$.did.	USPAT	OR	OFF	2006/03/27 16:53
L2	0	cyp4a11 near4 inhibitor	USPAT	OR	OFF	2006/03/27 16:53

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L1            0 CYP4A11 (4A) INHIBITOR

=> s cyp4a-11 (4a) inhibitor
L2            0 CYP4A-11 (4A) INHIBITOR
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L1	0	wo-9943310-$.did.	USPAT	OR	OFF	2006/03/27 16:53
L2	0	cyp4a11 near4 inhibitor	USPAT	OR	OFF	2006/03/27 17:36
L3	0	CYP4a11 near4 HETE	USPAT	OR	OFF	2006/03/27 17:36
L4	0	CYP4a11 near4 (arachidonic adj acid)	USPAT	OR	OFF	2006/03/27 17:37
L5	0	CYP4F near4 (arachidonic adj acid)	USPAT	OR	OFF	2006/03/27 17:37
L6	0	CYP4F near4 (hete)	USPAT	OR	OFF	2006/03/27 17:37

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NEWS 5 JAN 13 IPC 8 searching in IFIPAT, IFIUDB, and IFICDB
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=> s CYP4a11 (4A) HETE
L1 8 CYP4A11 (4A) HETE

=> s CYP4a11 (4A) (arachidonic acid)
L2 13 CYP4A11 (4A) (ARACHIDONIC ACID)

=> s l1 and l2
L3 5 L1 AND L2

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=> duplicate
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L4             2 DUPLICATE REMOVE L3 (3 DUPLICATES REMOVED)

=> d l4 1-2 bib ab

L4   ANSWER 1 OF 2     MEDLINE on STN                    DUPLICATE 1
AN   2005004008     MEDLINE
DN   PubMed ID: 15611369
TI   Functional variant of CYP4A11 20-hydroxyeicosatetraenoic acid
synthase is
     associated with essential hypertension.
AU   Gainer James V; Bellamine Aouatef; Dawson Elliott P; Womble
Kristie E;
     Grant Sarah W; Wang Yarong; Cupples L Adrienne; Guo Chao-Yu;
Demissie
     Serkalem; O'Donnell Christopher J; Brown Nancy J; Waterman
Michael R;
     Capdevila Jorge H
CS   Department of Medicine, Division of Clinical Pharmacology,
Vanderbilt
     University Medical School, Nashville, Tenn 37232-0146, USA.
NC   CA68485 (NCI)
     DK28350 (NIDDK)
     DK38226 (NIDDK)
     HL04221 (NHLBI)
     HL60906 (NHLBI)
     HL65193 (NHLBI)
     HL67308 (NHLBI)
     N01-HC-25195 (NHLBI)
     RR00095 (NCRR)
SO   Circulation, (2005 Jan 4) Vol. 111, No. 1, pp. 63-9.  Electronic
     Publication: 2004-12-20.
     Journal code: 0147763. E-ISSN: 1524-4539.
CY   United States
DT   Journal; Article; (JOURNAL ARTICLE)
LA   English
FS   Abridged Index Medicus Journals; Priority Journals
EM   200506
ED   Entered STN: 20050105
     Last Updated on STN: 20050628
     Entered Medline: 20050627
AB   BACKGROUND: The CYP4A11 arachidonic acid
     monooxygenase oxidizes endogenous arachidonic acid (AA) to
     20-hydroxyeicosatetraenoic acid (20-HETE), a metabolite with
renovascular
     and tubular functions.  Mice with targeted disruption of
Cyp4a14, a murine
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homologue of CYP4A11, have severe hypertension. We combined molecular and biochemical approaches to identify a functional variant of the **CYP4A11** 20-**HETE** synthase and determine its association with hypertensive status in 2 independent human populations. METHODS AND RESULTS: A thymidine-to-cytosine polymorphism at nucleotide 8590 resulted in a phenylalanine-to-serine substitution at amino acid 434. Expression of cDNA with serine 434 resulted in a protein with a significantly reduced AA and lauric acid metabolizing activity. In a population of 512 whites from Tennessee, the age, body mass index, and gender-adjusted OR of having hypertension attributable to the 8590C variant was 2.31 (95% CI 1.41 to 3.78) compared with the reference 8590TT genotype. In subjects from the Framingham Heart Study, the adjusted ORs of hypertension associated with the 8590C variant were 1.23 (CI 0.94 to 1.59; n=1538) in all subjects and 1.33 (CI 1.01 to 1.77; n=1331) when subjects with diabetes were excluded. No association of the variant with hypertension was detected in a population of 120 blacks. CONCLUSIONS: We identified a variant of the human CYP4A11 (T8590C) that encodes for a monooxygenase with reduced 20-HETE synthase activity. The association of the T8590C variant with hypertension supports its role as a polygenic determinant of blood pressure control in humans, and results obtained from the large population database suggest that the relevance of the variant may vary according to hypertension comorbidity.

L4 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1998:394644 CAPLUS
DN 129:120516
TI Metabolism of arachidonic acid to 20-hydroxy-5,8,11,14-eicosatetraenoic acid by P450 enzymes in human liver: involvement of CYP4F2 and CYP4A11
AU Powell, Pnina K.; Wolf, Imre; Jin, Rongyu; Lasker, Jerome M.
CS Department of Biochemistry, Mount Sinai School of Medicine, New York, NY, USA

SO Journal of Pharmacology and Experimental Therapeutics (1998), 285(3),
1327-1336
CODEN: JPETAB; ISSN: 0022-3565
PB Williams & Wilkins
DT Journal
LA English
AB 20-Hydroxy-5,8,11,14-eicosatetraenoic acid (20-HETE) is a principal
arachidonic acid (AA) metabolite formed via P 450-dependent oxidation in
hepatic and renal microsomes. Although 20-HETE plays an important role in
the regulation of cell and/or organ physiol., the P 450 enzyme(s)
catalyzing its formation in humans remain undefined. In this study, we
have characterized AA ω-hydroxylation to 20-HETE by human hepatic
microsomes and identified the underlying P450s. Anal. of microsomal AA
ω-hydroxylation revealed biphasic kinetics (KM1 and VMAX1 = 23 μM
and 5.5 min-1; KM2 and VMAX2 = 144 μM and 18.8 min-1) consistent with
catalysis by at least two enzymes. Of the human P450s examined, CYP4A11 and
CYP4F2 were both potent AA ω-hydroxylases, exhibiting rates of 15.6
and 6.8 nmol 20-HETE formed/min/nmol P 450, resp. Kinetic parameters of
20-HETE formation by CYP4F2 (Km = 24 μM; VMAX = 7.4 min-1) and CYP4A11
(KM = 228 μM; VMAX = 49.1 min-1) resembled the low and high KM
components, resp., found in liver microsomes. Antibodies to CYP4F2
markedly inhibited (93.4±6%; n = 5) formation of 20-HETE by hepatic
microsomes, whereas antibodies to CYP4A11 were much less inhibitory
(13.0±9%; n = 5). Moreover, a strong correlation (r = 0.78; P <.02)
was found between microsomal CYP4F2 content and AA ω-hydroxylation
among nine subjects. The correlation (r = 0.76; P <.02) also noted
between **CYP4A11** content and 20-**HETE** formation stemmed
from the relationship (r = 0.83; P <.02) between hepatic CYP4A11 and
CYP4F2 levels in the subjects. Finally, immunoblot anal. revealed that in
addition to liver, both P450s also were expressed in human kidney. Our

results indicate that AA ω-hydroxylation in human liver is catalyzed by two enzymes of the CYP4 gene family, namely CYP4F2 and CYP4A11, and that CYP4F2 underlies most 20-HETE formation occurring at relevant AA concns.
RE.CNT 54 THERE ARE 54 CITED REFERENCES AVAILABLE FOR THIS RECORD
ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> s CYP4F (4A) HETE
L5 4 CYP4F (4A) HETE

=> s CYP4F (4A) (arachidonic acid)
L6 1 CYP4F (4A) (ARACHIDONIC ACID)

=> s l5 and l6
L7 1 L5 AND L6

=> d l7 bib ab

L7 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 2004:181462 CAPLUS
DN 140:402178
TI Catalytic activity and isoform-specific inhibition of rat cytochrome P450 4F enzymes
AU Xu, Fengyun; Falck, John R.; Ortiz de Montellano, Paul R.; Kroetz, Deanna L.
CS Department of Biopharmaceutical Sciences, University of California San Francisco, San Francisco, CA, USA
SO Journal of Pharmacology and Experimental Therapeutics (2004), 308(3), 887-895
CODEN: JPETAB; ISSN: 0022-3565
PB American Society for Pharmacology and Experimental Therapeutics
DT Journal
LA English
AB Arachidonic acid is ω-hydroxylated to 20-hydroxyeicosatetraenoic acid (20-HETE), which has effects on vasoactivity and renal tubular transport and has been implicated in the regulation of blood pressure. Cytochrome P 450 4A isoforms are generally considered the major arachidonic acid ω-hydroxylases; however, little is known about the role of rat **CYP4F** isoforms in 20-**HETE** formation. The rat CYP4F isoforms, CYP4F1, CYP4F4, CYP4F5, and CYP4F6, were heterologously expressed in Escherichia coli, and their substrate

specificity in fatty acid metabolism was characterized. Substrate-binding assays indicated that leukotriene B4 (LTB4) and arachidonic acid bound CYP4F1 and CYP4F4 in a type-I manner with a Ks of 25 to 59 μM, and lauric acid bound CYP4F4 poorly. Reconstituted CYP4F1 and CYP4F4 catalyzed the ω-hydroxylation of LTB4 with a Km of 24 and 31 μM, resp., and CYP4F5 had minor activity in LTB4 metabolism Importantly, CYP4F1 and CYP4F4 catalyzed the ω-hydroxylation of arachidonic acid with an apparent kcat of 9 and 11 min-1, resp. Lauric acid was a poor substrate for all of the CYP4F isoforms, and CYP4F6 had no detectable fatty acid ω-hydroxylase activity. The P 450 ω-hydroxylase inhibitors 17-octadecynoic acid, 10-undecynyl sulfate, and N-methylsulfonyl-12,12-dibromododec-11-enamide showed isoform-specific inhibition of CYP4F1- and CYP4F4-catalyzed ω-hydroxylation of arachidonic acid and potency differences between the CYP4A and CYP4F isoforms. These data support a significant role for CYP4F1 and CYP4F4 in the formation of 20-HETE and identify P 450 inhibitors that can be used to understand the relative contribution of the CYP4A and **CYP4F** isoforms to renal 20-**HETE** formation.

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ALL CITATIONS AVAILABLE IN THE RE FORMAT

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=> s 17-ODECYNOIC ACId
L3 0 17-ODECYNOIC ACID

=> s 17-OctaDECYNOIC ACID
L4 670 17-OCTADECYNOIC ACID

=> s l4 (3A) structure
L5 0 L4 (3A) STRUCTURE

=> s ((OctaDECYNOIC ACID) or (ODYA)) (3A) structure
L6 1 ((OCTADECYNOIC ACID) OR (ODYA)) (3A) STRUCTURE

=> d l6 bib ab

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1979:566794 CAPLUS
DN 91:166794
TI 4-**Octadecynoic acid**, a largely regular **structure** in space group P.hivin.1
AU Mo, Frode
CS Inst. Roentgentek., Univ. Trondheim, Trondheim, Norway
SO Acta Crystallographica, Section B: Structural Crystallography and Crystal Chemistry (1979), B35(9), 2135-40
CODEN: ACBCAR; ISSN: 0567-7408
DT Journal
LA English

AB 4-Octadecynoic acid is triclinic, space group P.hivin.1, with a 5.71(2)8,
b 5.475(10), c 45.13(7) Å, α 92.55(15)8 β 93.15(15)8 and
γ 123.95(25)°; Z = 4. The structure which has some OD
character was solved in 2 discrete steps by direct and Patterson methods.
Full-matrix least-squares refinement based on 1155 F0 from visually estimated
film intensities was terminated at R = 0.071. In the ordered structure,
neighboring carboxyl groups including the C atoms differ in relative
orientation by .apprx.82°. Atoms of both triple-bond fragments are
displaced from the plane of the main chain, probably largely because of
the packing requirements of one of the carboxyl groups. The zigzag chains
are tilted 20° away from the perpendicular to the Me end-group
planes, and pack laterally according to a triclinic subcell. Mols. are
linked together mainly as H-bonded dimers. The presence of stacking
faults and possible disorder in one of the carboxyl groups suggests local
alternative H-bond arrangements which would further stabilize the crystal
structure.

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FULL ESTIMATED COST	19.21	19.42

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L3 0 17-ODECYNOIC ACID

=> s 17-OctaDECYNOIC ACID
L4 670 17-OCTADECYNOIC ACID

=> s l4 (3A) structure
L5 0 L4 (3A) STRUCTURE

=> s ((OctaDECYNOIC ACID) or (ODYA)) (3A) structure
L6 1 ((OCTADECYNOIC ACID) OR (ODYA)) (3A) STRUCTURE

=> d l6 bib ab

L6 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2006 ACS on STN
AN 1979:566794 CAPLUS
DN 91:166794
TI 4-**Octadecynoic acid**, a largely regular **structure** in space group P.hivin.1
AU Mo, Frode
CS Inst. Roentgentek., Univ. Trondheim, Trondheim, Norway
SO Acta Crystallographica, Section B: Structural Crystallography and Crystal Chemistry (1979), B35(9), 2135-40
CODEN: ACBCAR; ISSN: 0567-7408
DT Journal
LA English

AB 4-Octadecynoic acid is triclinic, space group P.hivin.1, with a 5.71(2)8,
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